

IN THE ABSTRACT

Please replace the Abstract with the following paragraph.

A method and apparatus for estimating a communication channel impulse response $h(t)$ is disclosed. The method comprises the steps of generating a data sequence d_i having a constrained portion Cd_i associated with at least two codes w_0, w_1 , wherein a correlation $A_{code}(k)$ of the constrained portion Cd_i with one of the codes w_0, w_1 is characterized by a maximum value at $k = 0$ and less than maximum values at $k \neq 0$; generating a chip sequence c_j having a chip period T_c as the data sequence d_i spread by a spreading sequence S_j of length N ; generating $co_m(t) = co(t + mNT_c)$ for $m = 0, 1, \dots, M$ by correlating a received signal $r(t)$ with the spreading sequence S_j , wherein the received signal $r(t)$ comprises the chip sequence c_j applied to the communication channel; and generating an estimated communication channel impulse response $\hat{h}_M(t)$ as a combination of $co_m(t)$ and d_m for $m = 0, 1, \dots, M$.